AMENDMENTS TO THE CLAIMS

Please enter the following amendments, and replace all previous versions of the claims with the following "Claims Listing":

Claims 1-32 (cancelled).

Claim 33 (previously presented). Apparatus according to claim 63 wherein:

the pump source includes a plurality of laser diodes and at least one second amplifying waveguide;

the first amplifying waveguide is pumped by the second amplifying waveguide, and the second amplifying waveguide is pumped by the laser diodes; and

the second amplifying waveguide is configured to improve the beam quality of radiation emitted by the laser diodes.

Claim 34 (previously presented). Apparatus according to claim 33 wherein the pump source includes at least one multimode beam combiner for combining optical radiation emitted by the laser diodes.

Claim 35 (previously presented). Apparatus according to claim 33 further comprising at least one first beam combiner configured to combine the pump radiation.

Claims 36 - 37 (cancelled).

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Claim 38 (previously presented). Apparatus according to claim 63 wherein the first rare earth dopant is selected from the group consisting of erbium, holmium and thulium.

Claim 39 (previously presented). Apparatus according to claim 38 wherein the first rare earth dopant is co-doped with ytterbium.

Claim 40 (previously presented). Apparatus according to claim 63 wherein the first rare-earth dopant is pumped substantially at the peak of its absorption band.

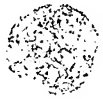
Claim 41 (previously presented). Apparatus according to claim 63 wherein the first optical fibre comprises a core and a cladding.

Claims 42-43 (cancelled).

Claim 44 (previously presented). Apparatus according to claim 63 wherein the first optical fibre comprises a plurality of cores.

Claims 45 - 46 (cancelled).

Claim 47 (previously presented). Apparatus according to claim 63 wherein the second optical fibre comprises a core and a cladding.



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Claim 48 (previously presented). Apparatus according to claim 47 further comprising a grating written into at least one of the core and the cladding.

Claim 49 (previously presented). Apparatus according to claim 63 wherein the second optical fibre is single mode.

Claim 50 (previously presented). Apparatus according to claim 63 wherein the second optical fibre is multi mode.

Claim 51 (previously presented). Apparatus according to claim 63 wherein the second optical fibre comprises a plurality of cores.

Claim 52 (cancelled).

Claim 53 (previously presented). Apparatus according to claim 63 wherein the means to change the wavelength of the pump radiation emitted by the second amplifying waveguide is a source of optical radiation.

Claims 54-55 (cancelled).

Claim 56 (previously presented). Apparatus according to claim 63 wherein the pump source supplies the pump radiation for in-band pumping the first amplifying waveguide.

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Claim 57 (previously presented). Apparatus according to claim 56 wherein both the wavelength of the pump radiation and the wavelength of the optical radiation are between 1400nm and 2500nm.

Claim 58 (previously presented). Apparatus according to claim 63 wherein the pump source comprises a broad stripe laser diode.

Claim 59 (previously presented). Apparatus according to claim 63 wherein the optical radiation is coupled to a scanner.

Claim 60 (previously presented). Apparatus according to claim 59 further comprising a controller configured to synchronize the optical radiation with the scanner.

Claim 61 (previously presented). Apparatus according to claim 63, wherein the apparatus is in the form of an amplifier, a laser, a master oscillator power amplifier, a Q-switched laser, a source of amplified spontaneous emission, or a continuous wave laser.

Claim 62 (previously presented). Apparatus according to claim 63 wherein the apparatus is in the form of a laser for material processing.

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Claim 63 (currently amended). Apparatus for providing optical radiation comprising:

a pump source and at least one first amplifying waveguide,

wherein

the pump source comprises a plurality of laser diodes and least one second amplifying waveguide;

the plurality of laser diodes are configured to pump the second amplifying waveguide to provide pump radiation;

the apparatus being such that the first amplifying waveguide emits the optical radiation when pumped by the pump radiation;

and wherein

the first amplifying waveguide comprises a first optical fibre;

the first optical fibre is a multi-mode optical fibre and comprises a region comprising a first rare-earth dopant;

and wherein:

the second amplifying waveguide comprises a second optical fibre;

the second optical fibre comprises a region comprising a second rare-earth dopant; and

the pump radiation is defined by a wavelength,

the apparatus further comprising a means to change the wavelength of the pump radiation emitted by the second amplifying waveguide between a first wavelength and a second wavelength, wherein the first rare-earth dopant is selected to absorb the pump radiation more strongly at the first wavelength than the second wavelength, and wherein the optical radiation emitted by the first waveguide has a higher brightness

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when the second waveguide emits the pump radiation at the first wavelength than when the second waveguide emits the pump radiation at the second wavelength, thereby providing a means to modulate the optical radiation emitted by the apparatus from on to substantially off.

Claim 64 (previously presented). Apparatus according to claim 33 wherein the means to change the wavelength of the pump radiation emitted by the second amplifying waveguide comprises a wavelength tuneable reflector.

Claim 65 (previously presented). Apparatus according to claim 33 wherein the means to change the wavelength of the pump radiation emitted by the second amplifying waveguide comprises an optical switch.

Claim 66 (previously presented). Apparatus according to claim 33 wherein the means to change the wavelength of the pump radiation emitted by the second amplifying waveguide comprises a tuneable grating.

Claim 67 (previously presented). Apparatus according to claim 66 wherein the tuneable grating is one of thermally tuned or tuned by an actuator.

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Claim 68 (previously presented). Apparatus according to claim 63, wherein:

the apparatus is in the form of a master oscillator power amplifier; and

the means to change the wavelength of the pump radiation emitted by the second amplifying waveguide comprises a source of optical radiation.

Claim 69 (previously presented). Apparatus according to claim 63, wherein:

the dopant in the second waveguide is selected such that the second waveguide can emit at the first and second wavelengths; and

the dopant in the first waveguide is selected such that the absorption at the first wavelength is substantially greater than the absorption at the second wavelength.

Claim 70 (withdrawn). A source of optical radiation comprising:

a first fibre and a second fibre, and wherein:

the first fibre is doped with a first rare earth dopant selected to absorb pump radiation at a first wavelength and absorb substantially less pump radiation at a second wavelength;

the second fibre is doped with a second rare earth dopant selected to emit the pump radiation at both the first wavelength and the second wavelength;

the source of optical radiation further comprising a means for switching the pump radiation emitted by the second fibre from the first wavelength to the second wavelength such that optical radiation emitted by the first fibre can be modulated by switching the pump radiation emitted by the second fibre from the first wavelength to the second wavelength.

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Claim 71 (withdrawn). A method of providing optical radiation, comprising:

providing a first optical fiber comprising a first dopant, the first dopant selected to absorb pump radiation at a first wavelength and absorb substantially less pump radiation at a second wavelength;

providing a second optical fiber in optical contact with the first optical fiber, the second optical fiber comprising a second dopant, the second dopant selected to emit the pump radiation at both the first and the second wavelengths;

pumping the second optical fiber with the pump radiation at the second wavelength;

thereafter pumping the second optical fiber with the pump radiation at the first wavelength to cause the first optical fiber to lase; and

thereafter pumping the second optical fiber with the pump radiation at the second wavelength to cause the first optical fiber to cease lasing.

(End of Amendments.)

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